

FIG. 1

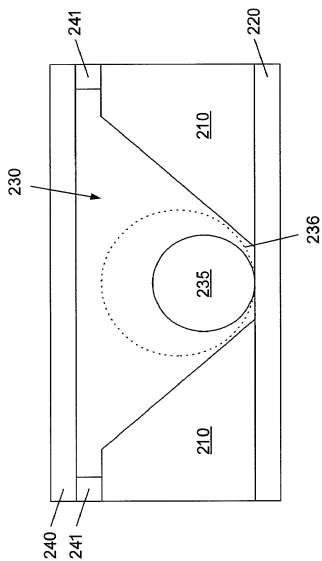
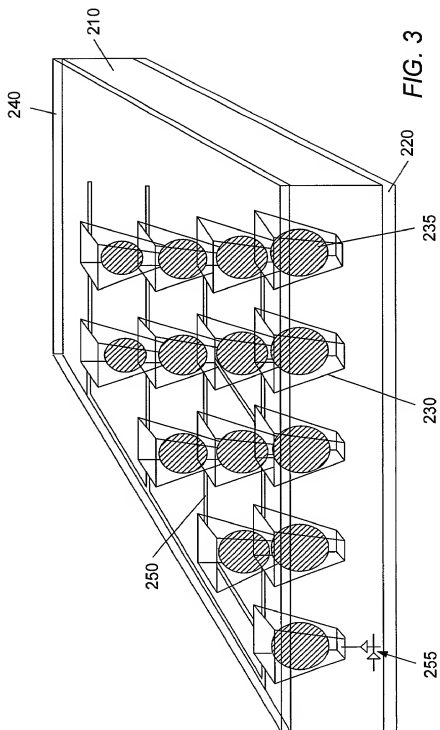


FIG. 2



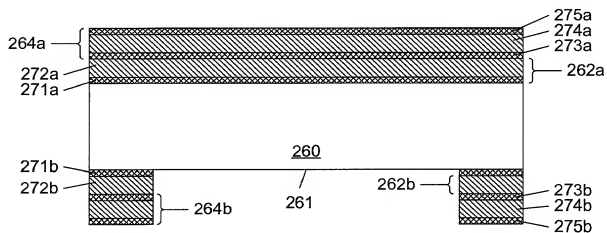


FIG. 4A

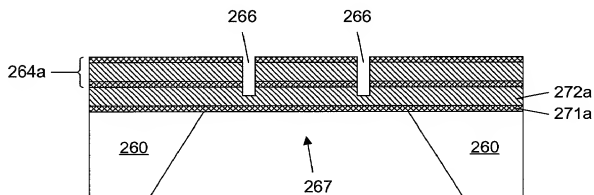


FIG. 4B

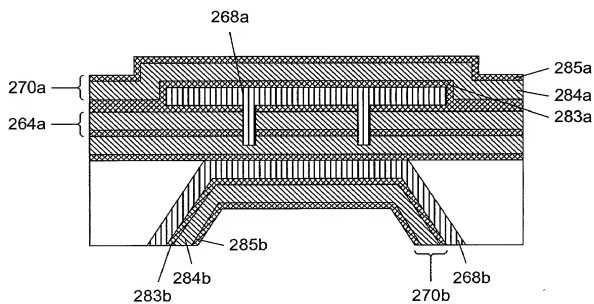


FIG. 4C

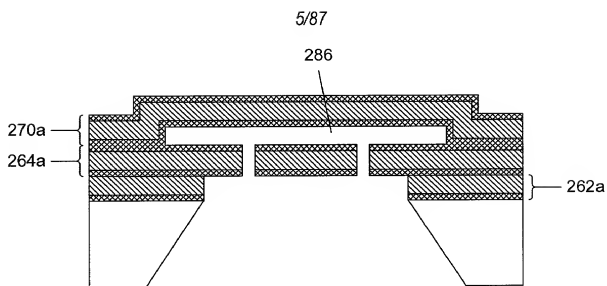


FIG. 4D

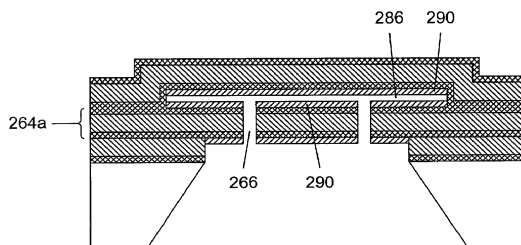


FIG. 4E

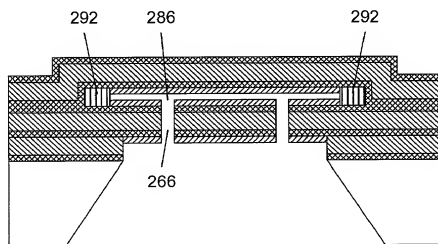


FIG. 4F

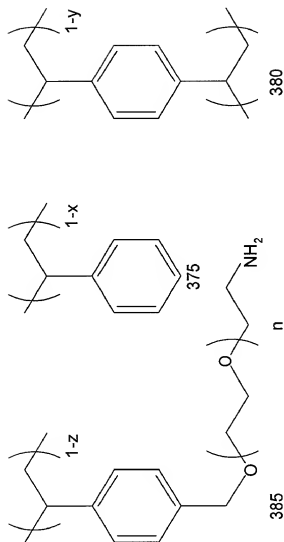
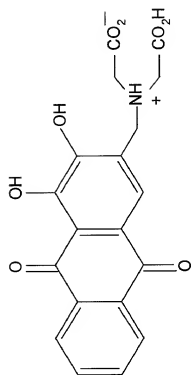
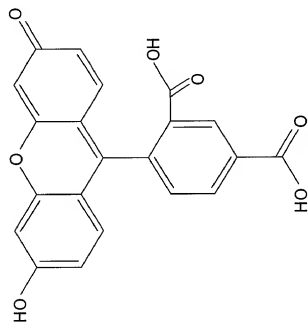


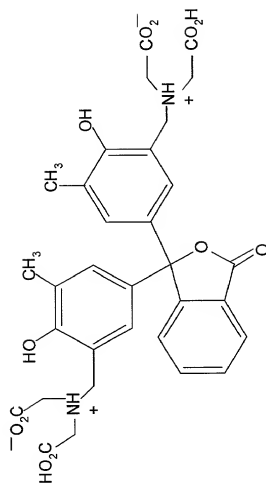
FIG. 5



alizarin complexone



5-carboxy fluorescein



o-cresolphthalein complexone

FIG. 6

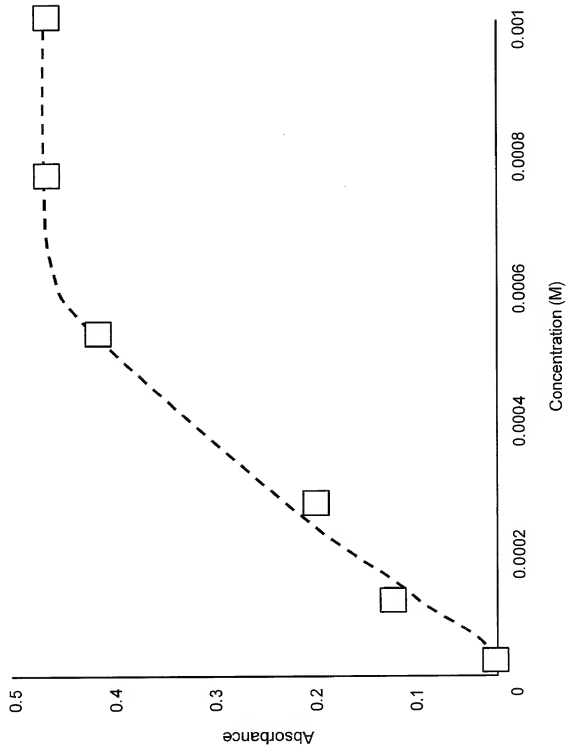


FIG. 7



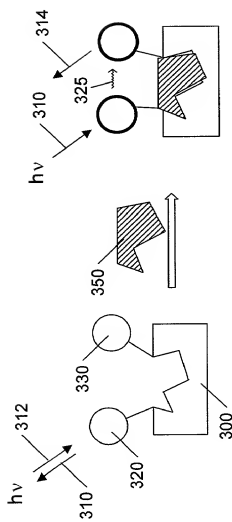


FIG. 8

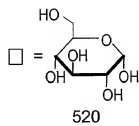
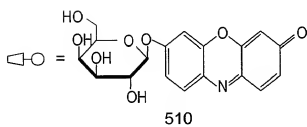
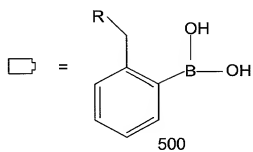
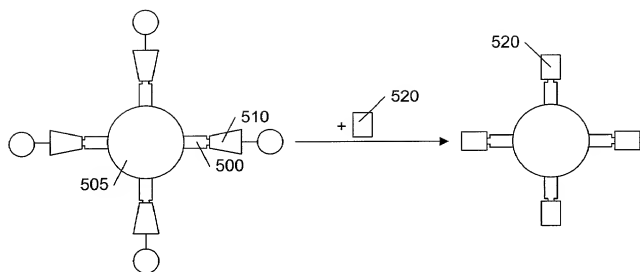
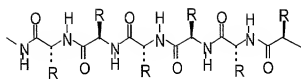
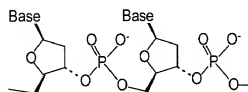


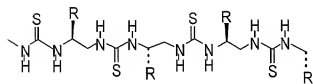
FIG. 9



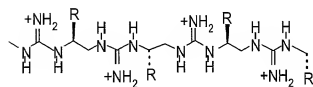
Peptides



Nucleotides



Polythioureas



Polyguanidiniums

FIG. 10

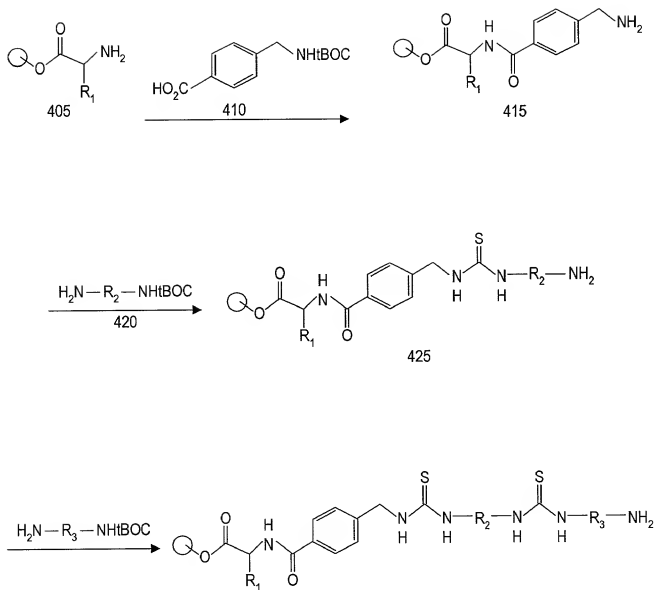


FIG. 11

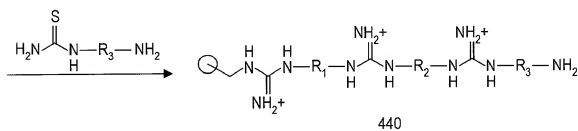
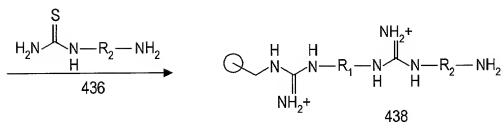
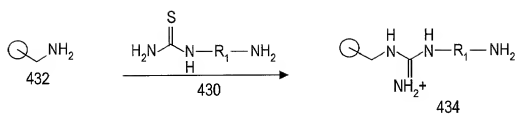


FIG. 12

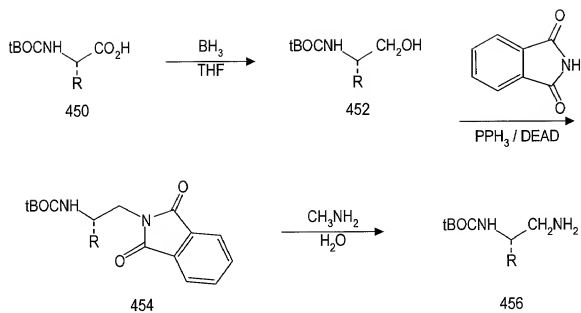


FIG. 13

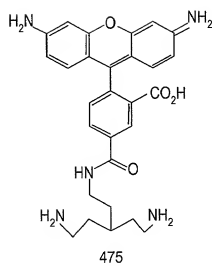
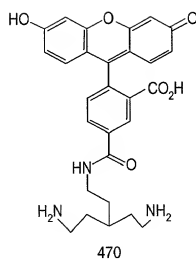


FIG. 14

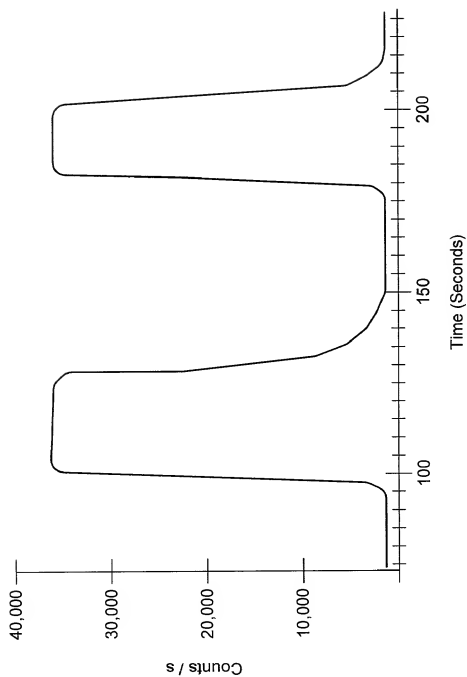


FIG. 15



RESIN: pH      Ion		Blank	Alizarin	o-Cresol- phthalein	Fluorescein	Alizarin-Ce <sup>3+</sup> complex
2	none					
2	Ca <sup>2+</sup>					
7	none					
7	Ca <sup>2+</sup>					
7	F <sup>-</sup>					
12	none					
12	Ca <sup>2+</sup>					
12	F <sup>-</sup>					

FIG. 16

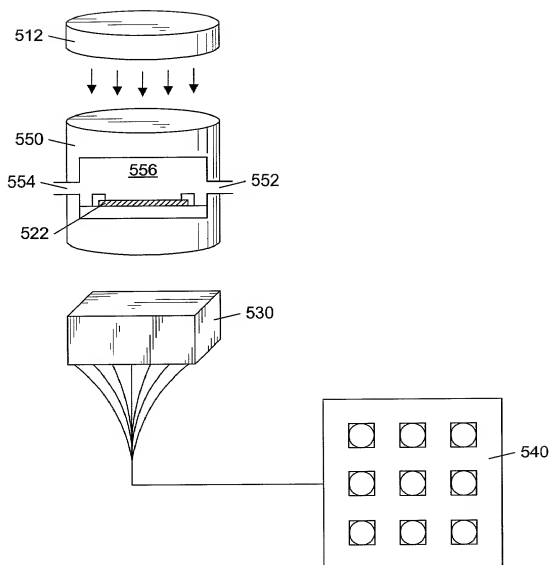


FIG. 17

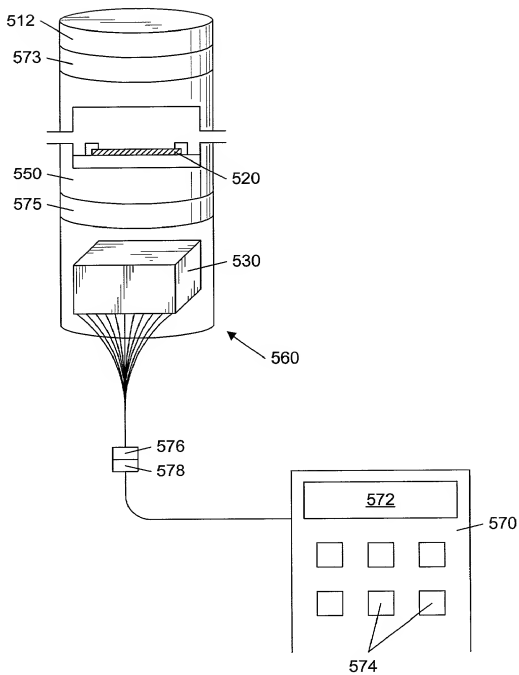


FIG. 18

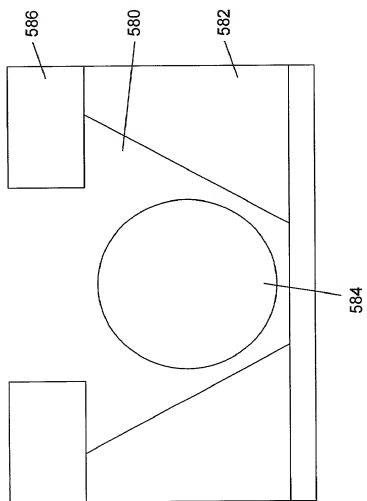


FIG. 19

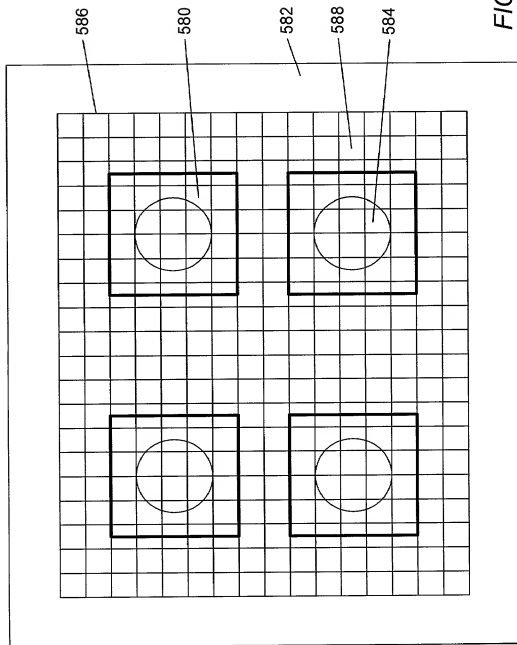


FIG. 20

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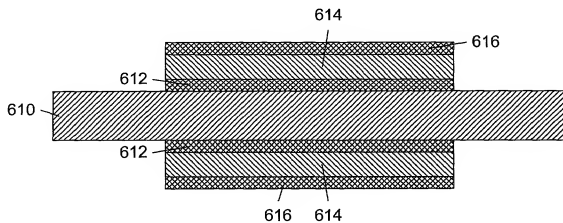


FIG. 21A

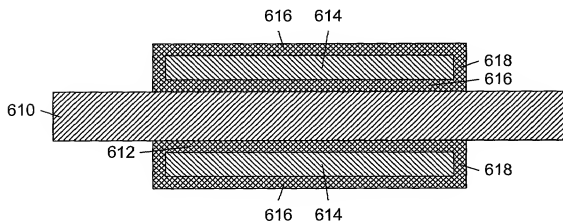


FIG. 21B

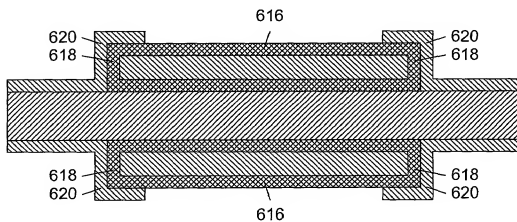


FIG. 21C

0975342.033001

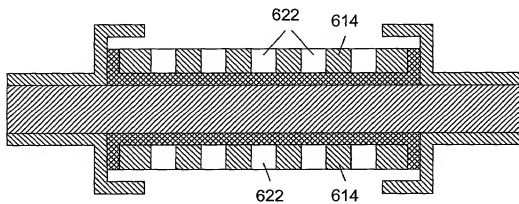


FIG. 21D

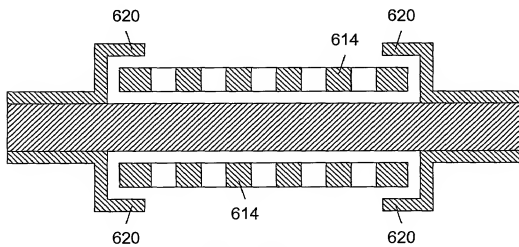


FIG. 21E

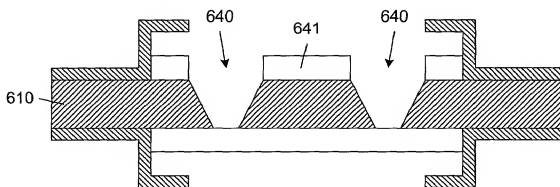


FIG. 21F

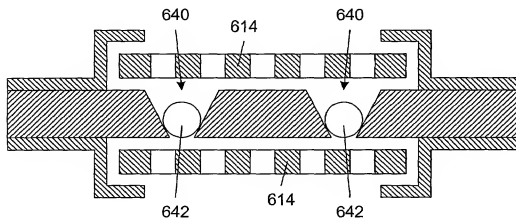


FIG. 21G



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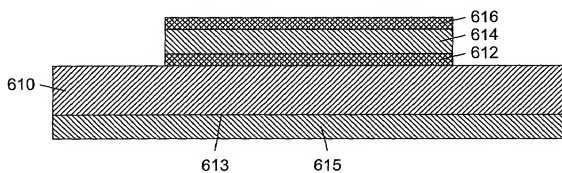


FIG. 22A

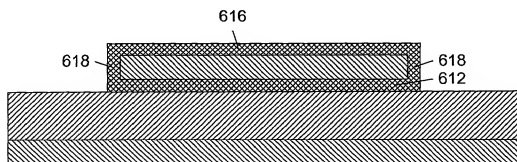


FIG. 22B

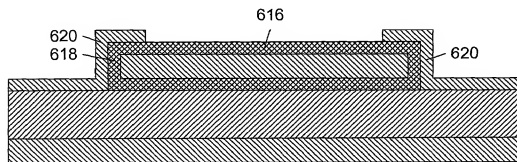


FIG. 22C

0975342.053001

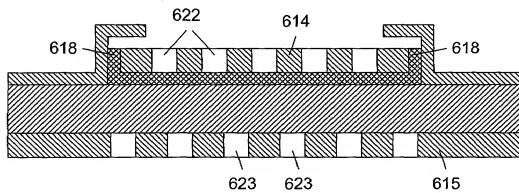


FIG. 22D

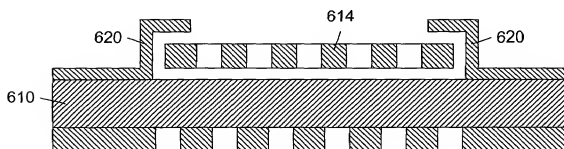


FIG. 22E

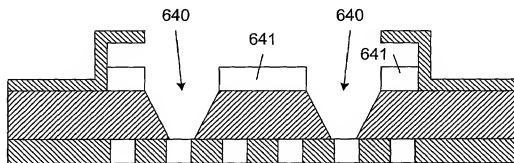


FIG. 22F

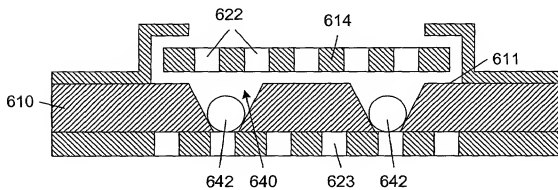


FIG. 22G

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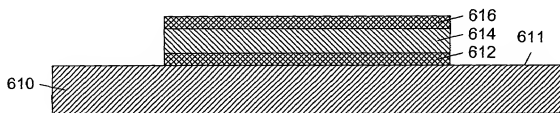


FIG. 23A

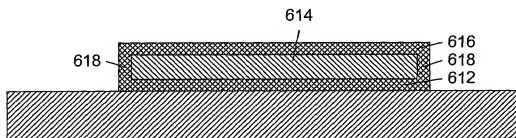


FIG. 23B

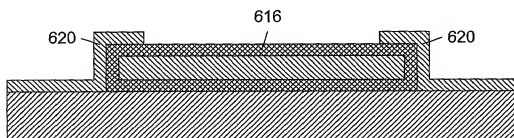


FIG. 23C

09775342-083004

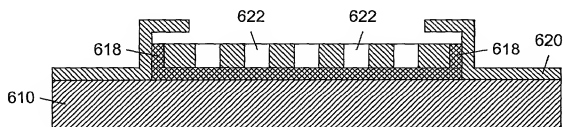


FIG. 23D

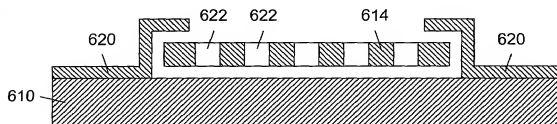


FIG. 23E

0075342-00001

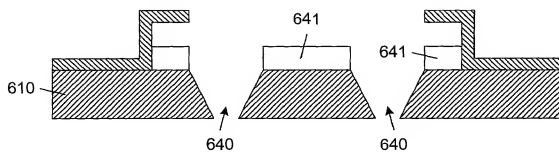


FIG. 23F

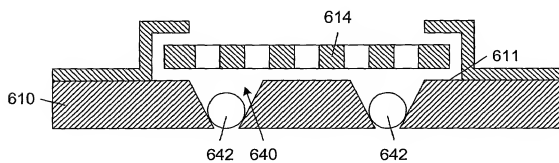


FIG. 23G

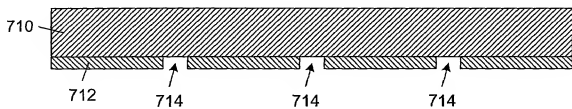


FIG. 24A

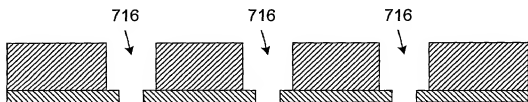


FIG. 24B

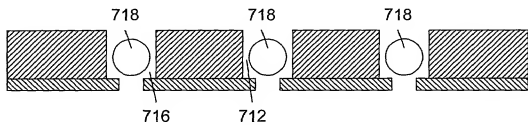


FIG. 24C

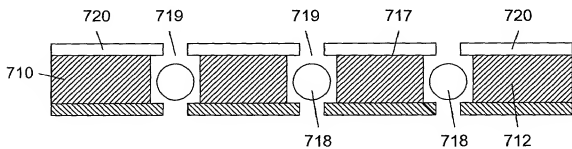


FIG. 24D

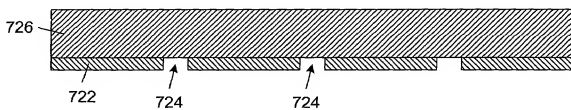


FIG. 25A

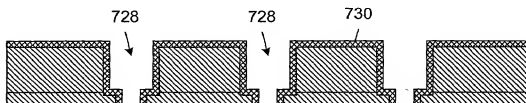


FIG. 25B

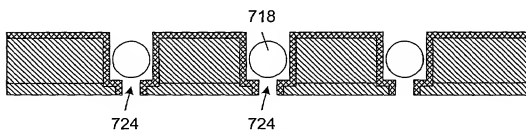


FIG. 25C

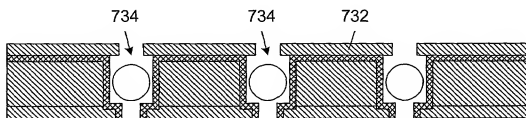


FIG. 25D



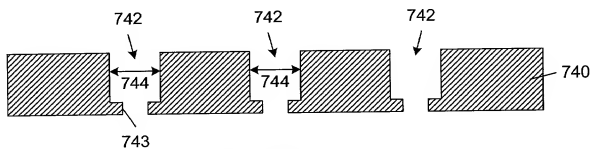


FIG. 26A

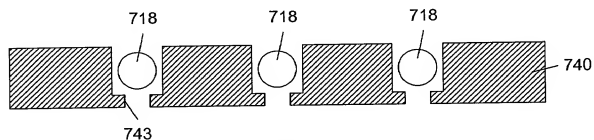


FIG. 26B

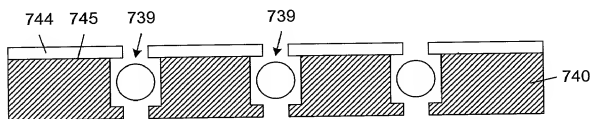


FIG. 26C

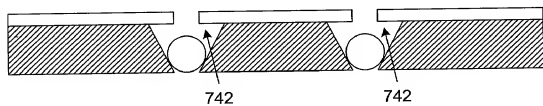


FIG. 26D

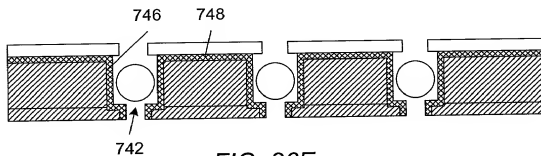


FIG. 26E

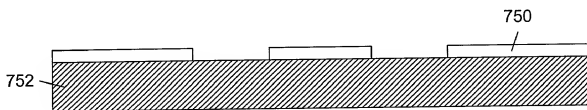


FIG. 27A

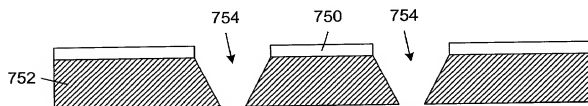


FIG. 27B

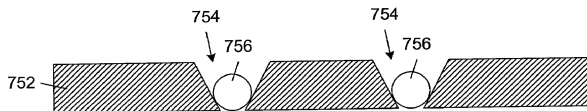


FIG. 27C

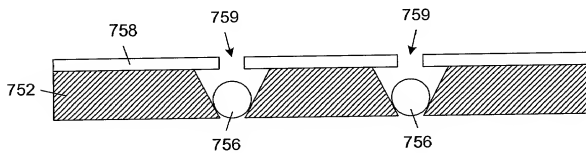


FIG. 27D



FIG. 28A



FIG. 28B

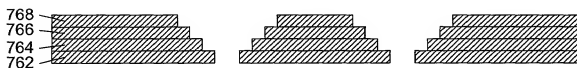


FIG. 28C

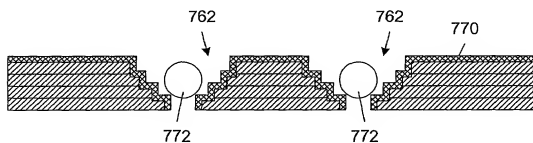


FIG. 28D

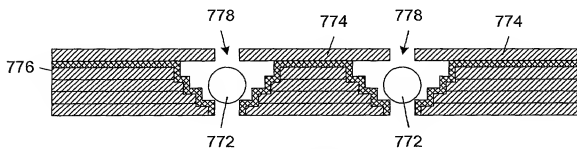


FIG. 28E



FIG. 29A

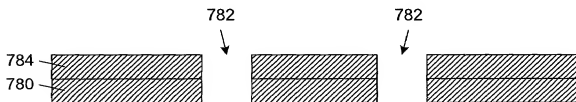


FIG. 29B

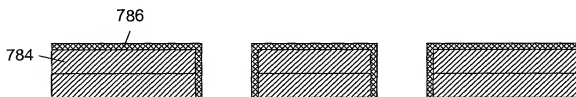


FIG. 29C

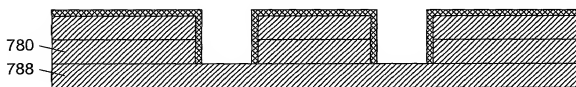


FIG. 29D

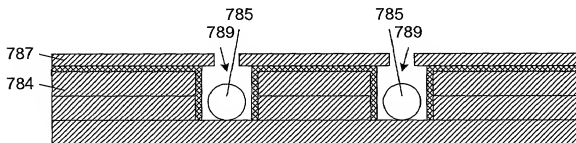


FIG. 29E

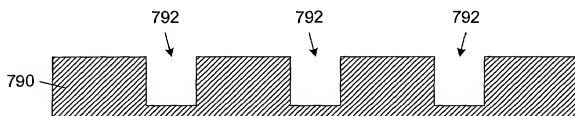


FIG. 30A

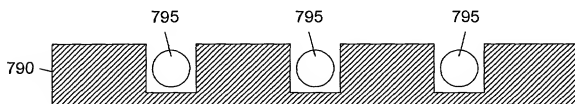


FIG. 30B

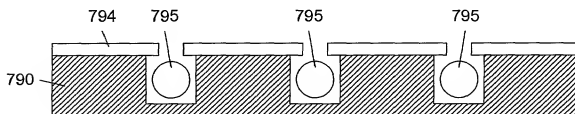


FIG. 30C



FIG. 30D

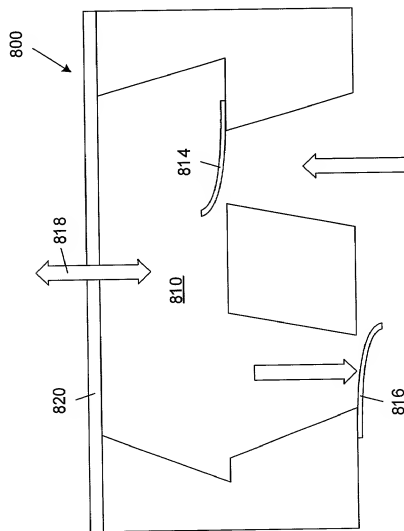


FIG. 31

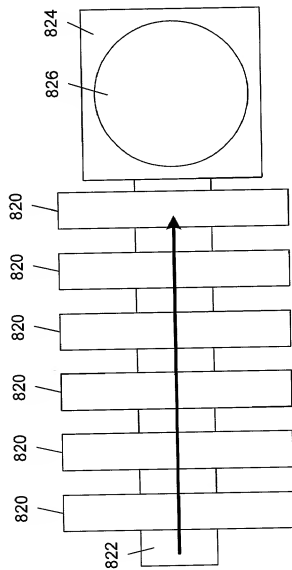


FIG. 32

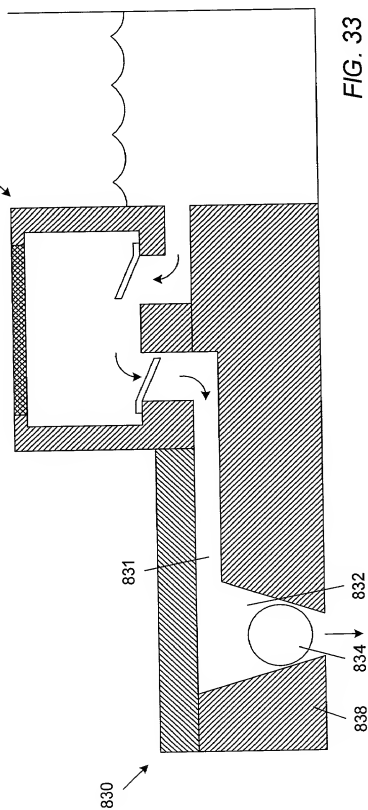
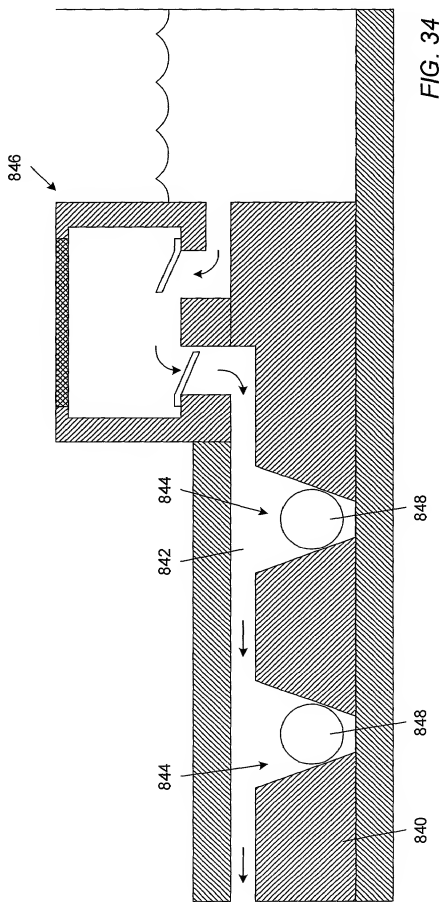
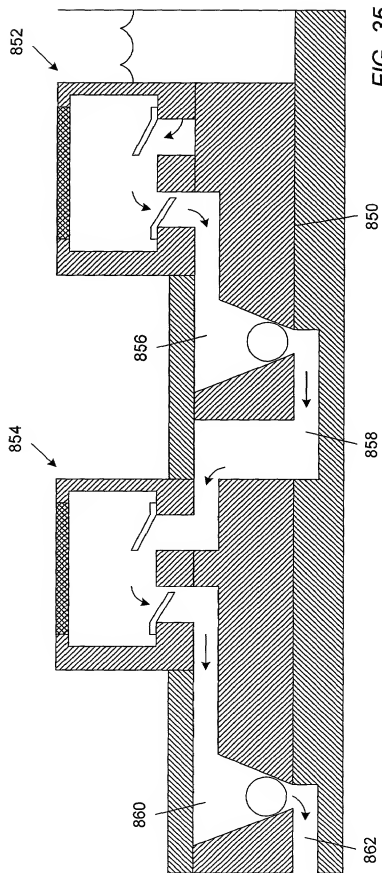


FIG. 33







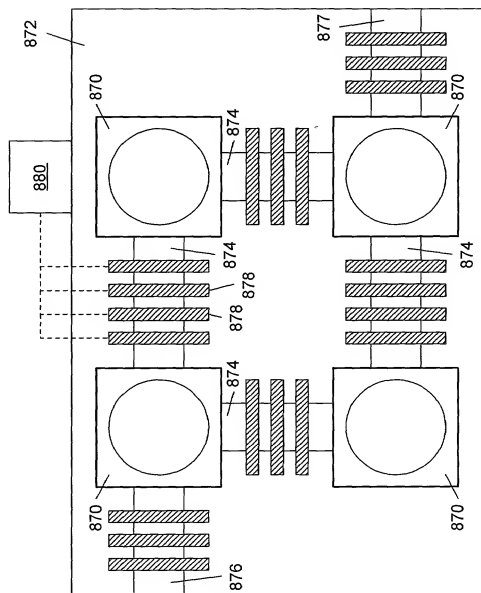
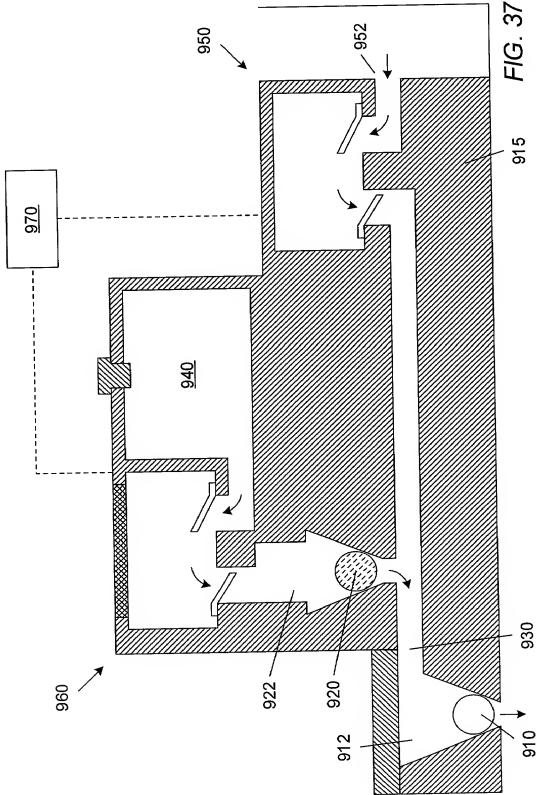


FIG. 36



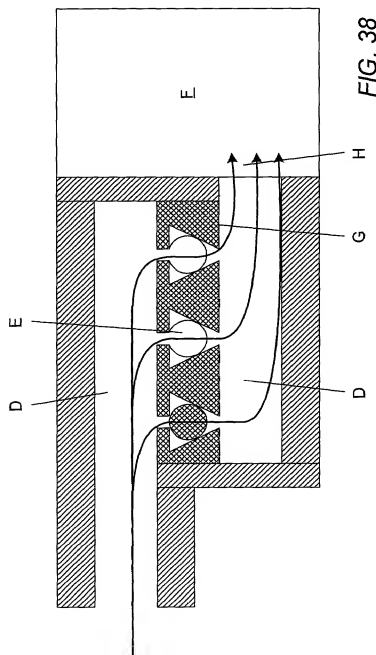


FIG. 38

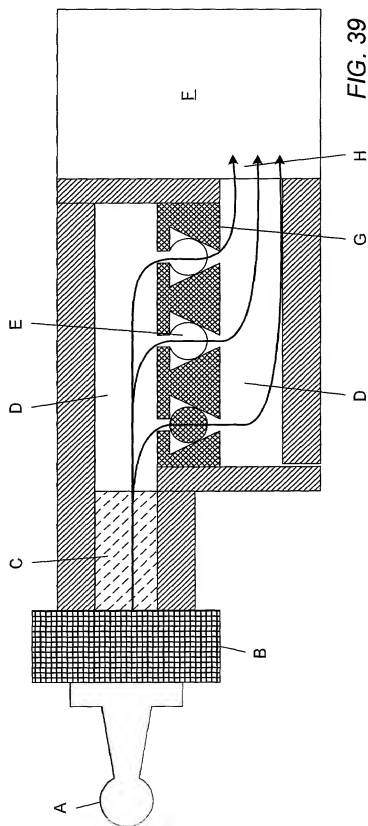


FIG. 39

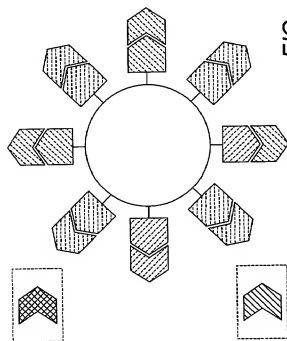


FIG. 40B

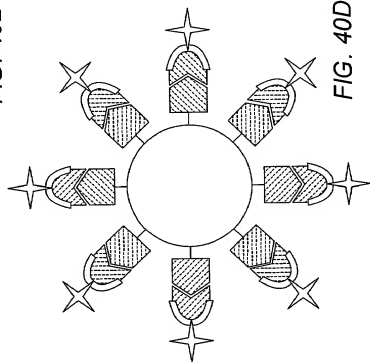


FIG. 40D

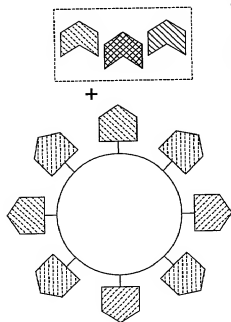


FIG. 40A

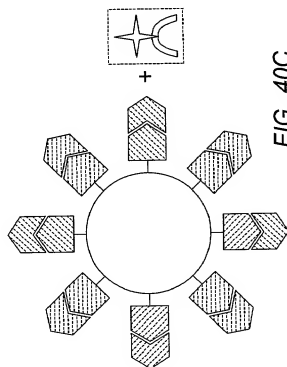


FIG. 40C

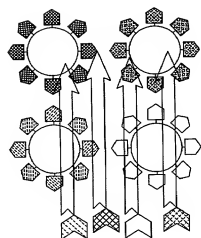


FIG. 41A

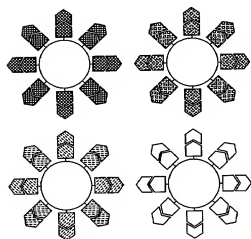


FIG. 41B

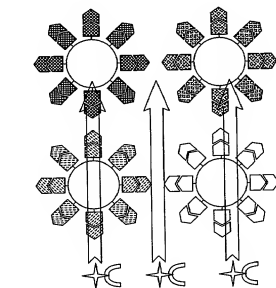


FIG. 41C

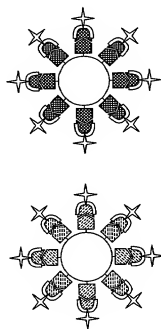
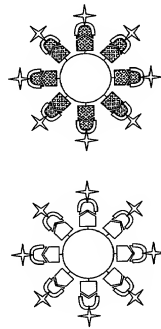


FIG. 41D





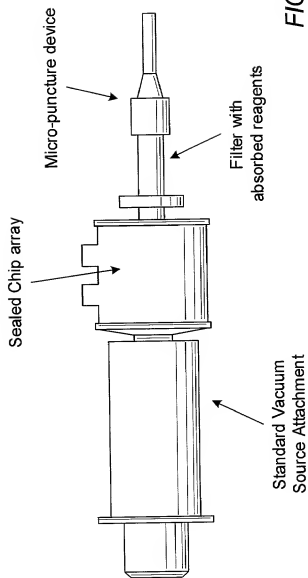


FIG. 42

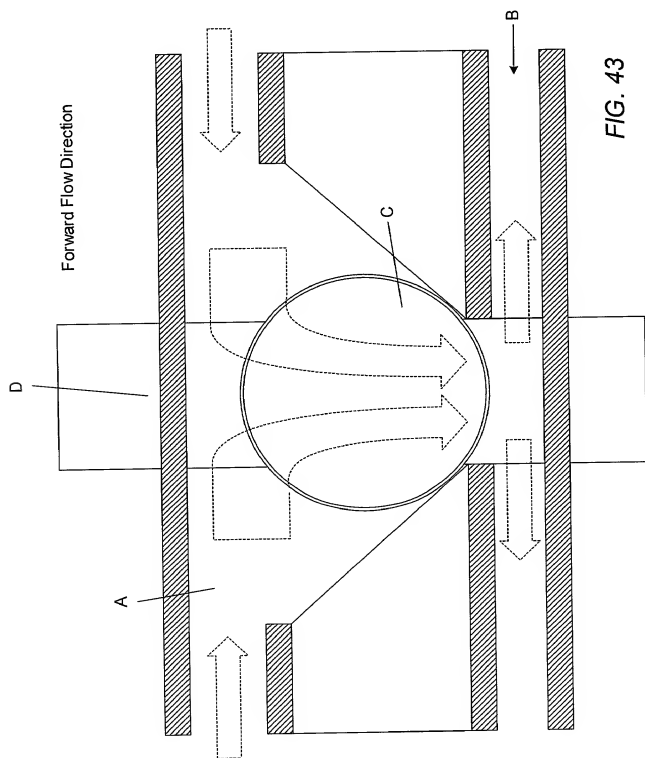


FIG. 43

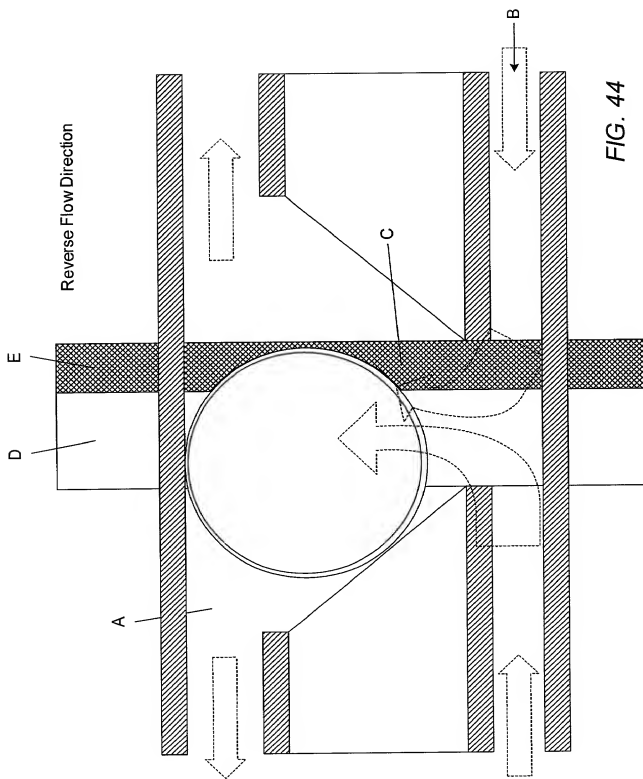


FIG. 44

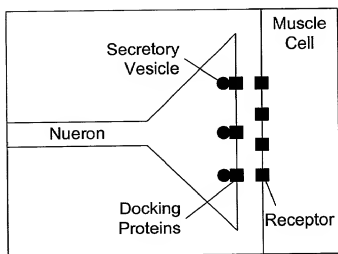


FIG. 45A

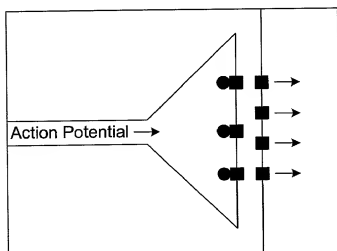


FIG. 45B

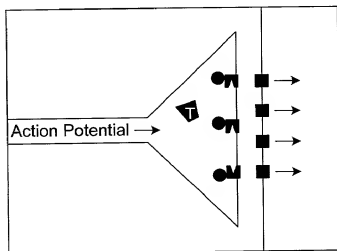


FIG. 45C

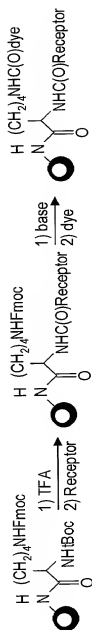


FIG. 45D

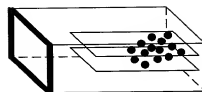


FIG. 46B

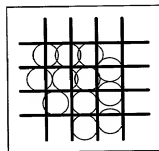


FIG. 46A

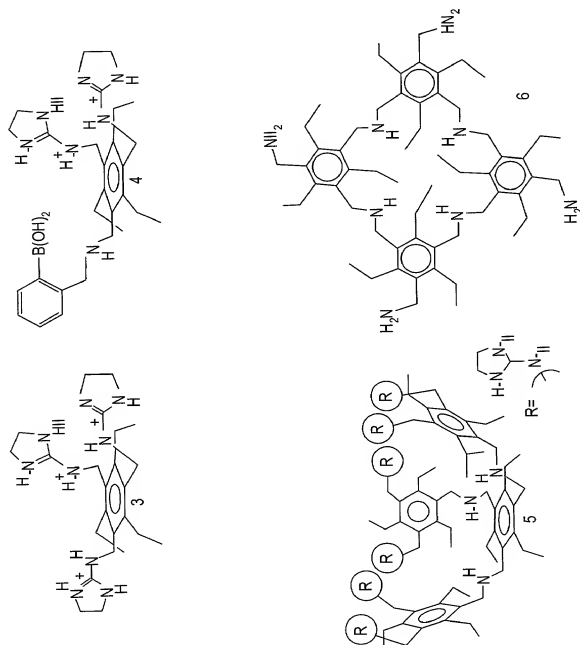


FIG. 47

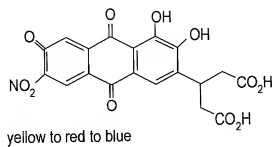
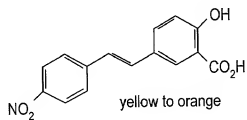
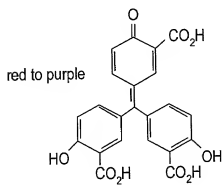
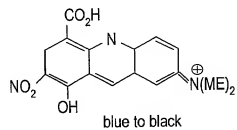
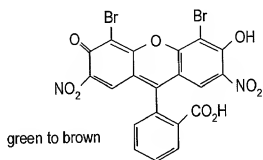
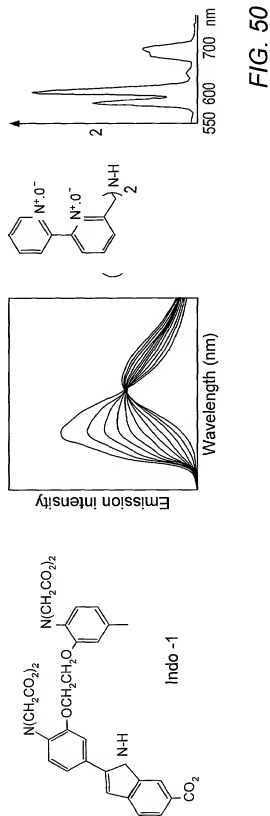
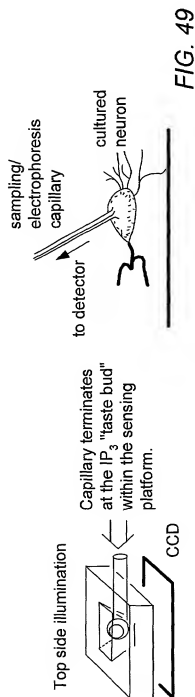


FIG. 48





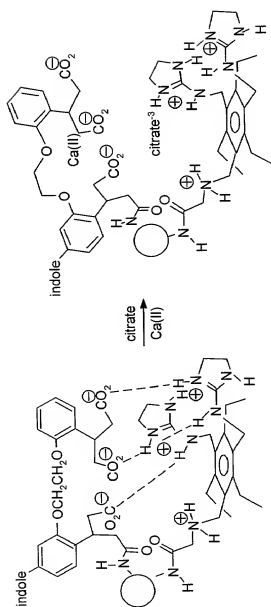


FIG. 51

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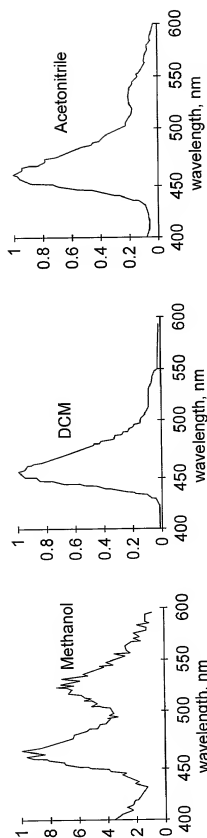
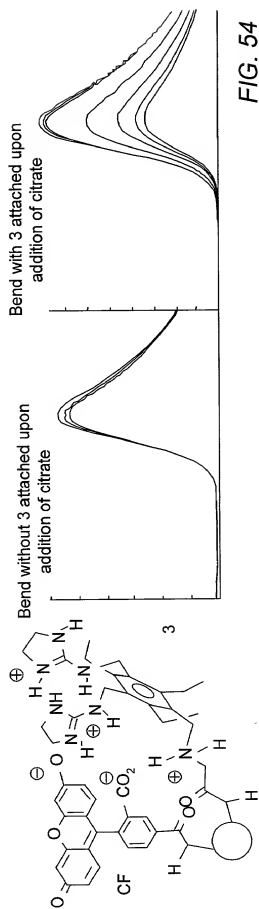
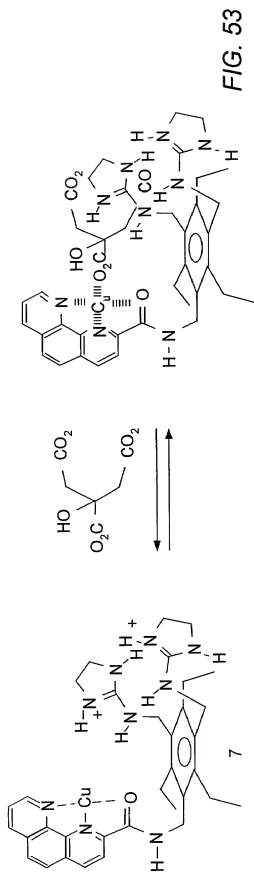
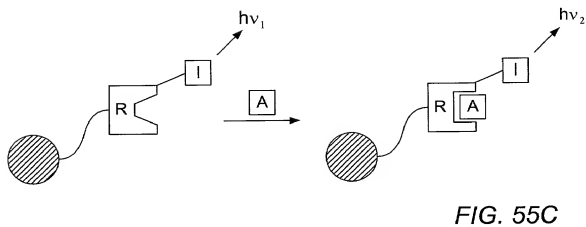
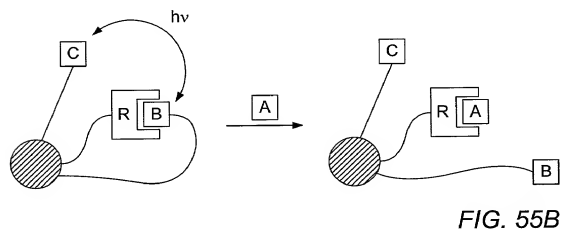
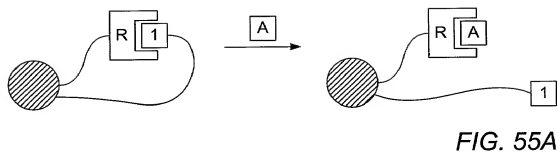


FIG. 52





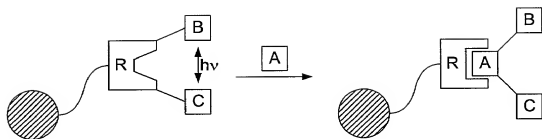


FIG. 55D

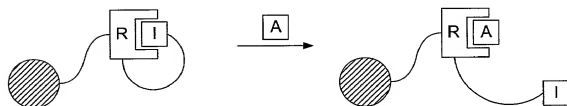


FIG. 55E

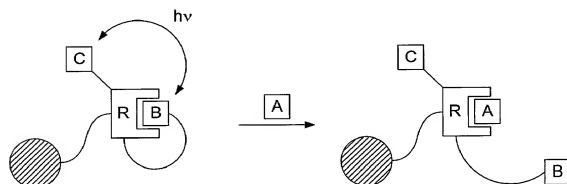


FIG. 55F

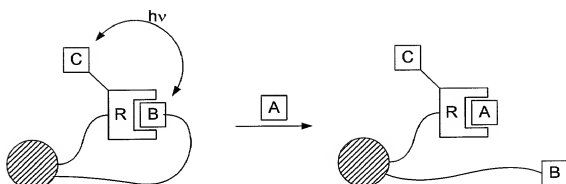


FIG. 55G

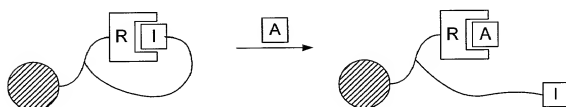


FIG. 55H

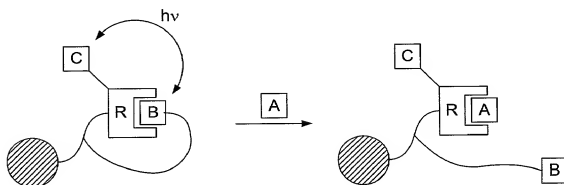


FIG. 55I

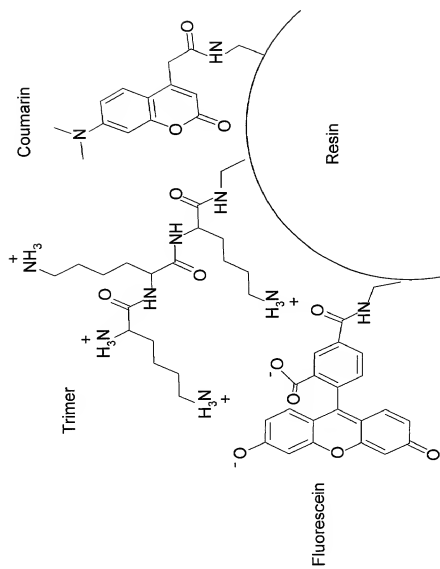


FIG. 56

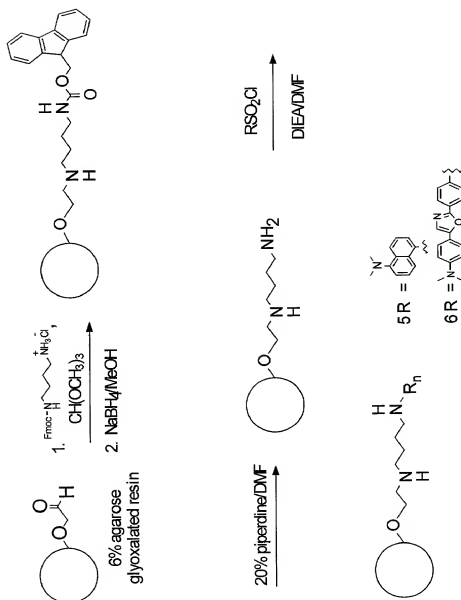


FIG. 57

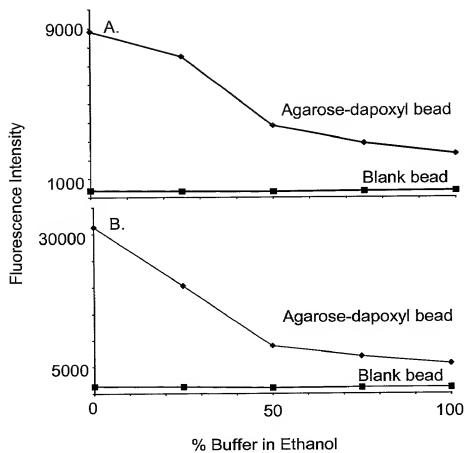


FIG. 58



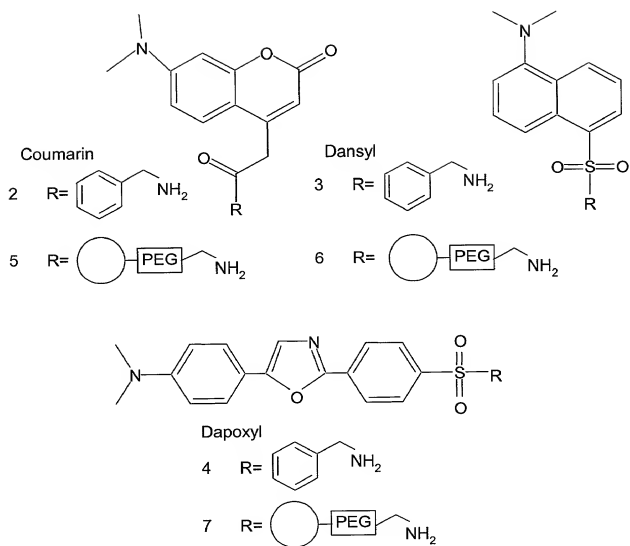


FIG. 59

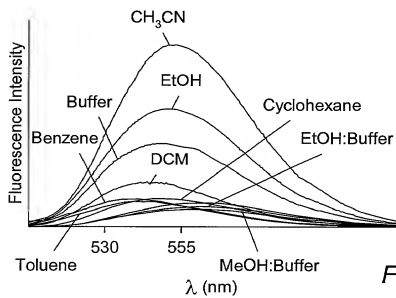
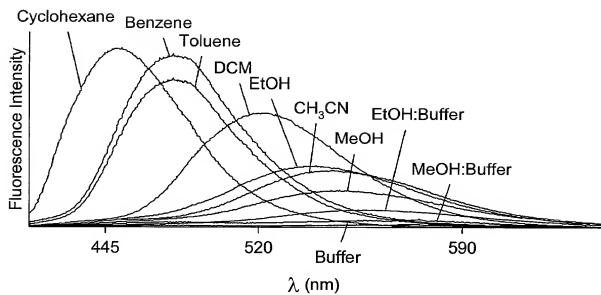


FIG. 60

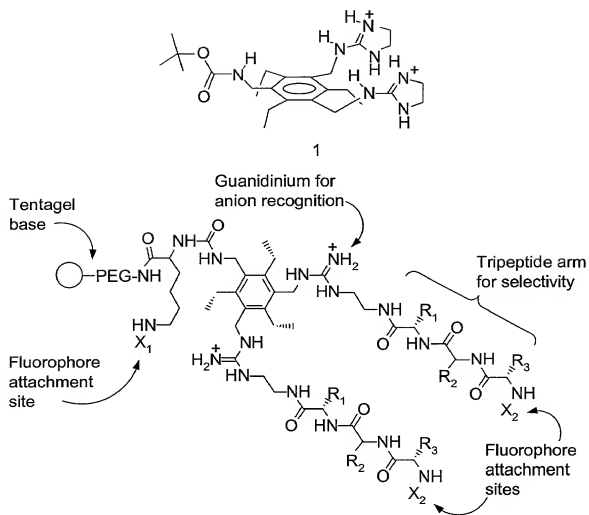
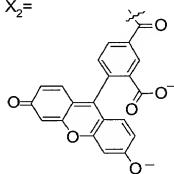
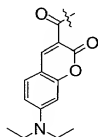
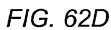
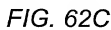
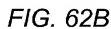
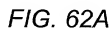
2:  $X_1=X_2=H$ 3:  $X_1=$  $X_2=$ 

FIG. 61



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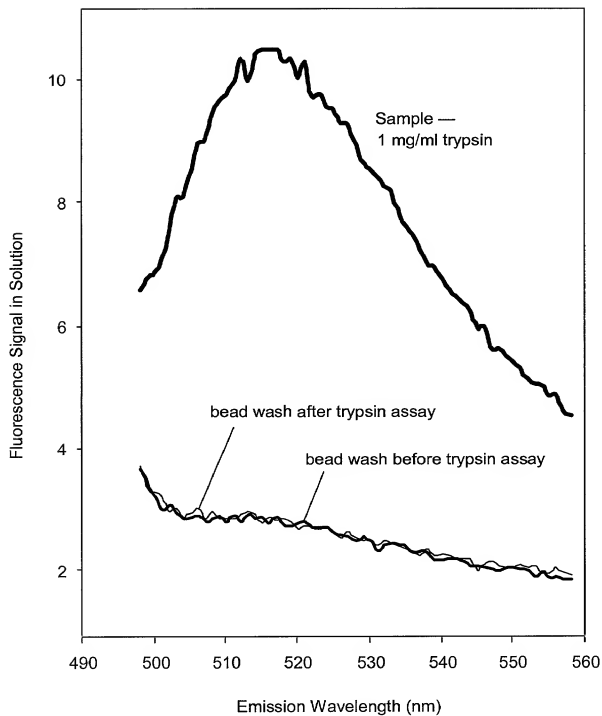


FIG. 63

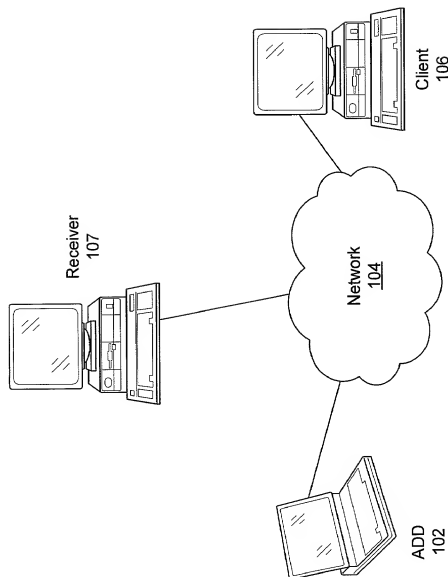


FIG. 64

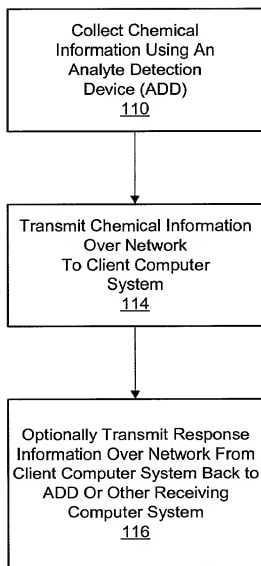


FIG. 65

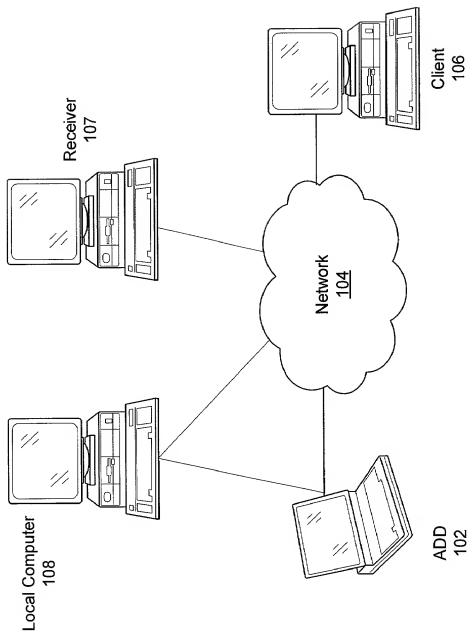


FIG. 66



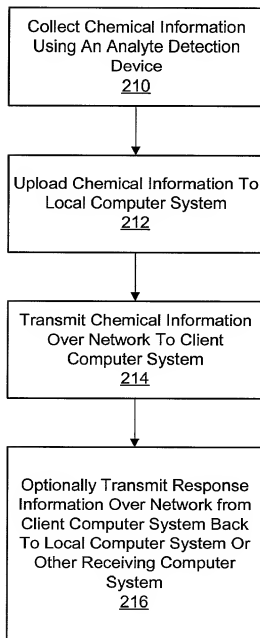


FIG. 67

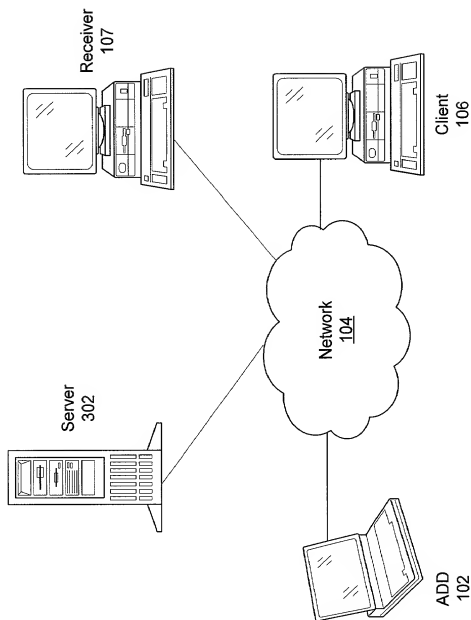


FIG. 68

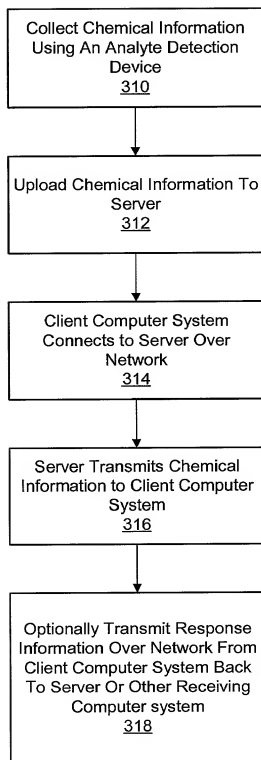


FIG. 69

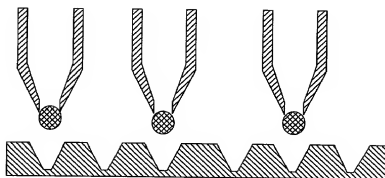


FIG. 70A

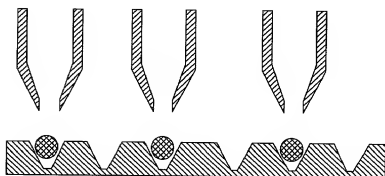


FIG. 70B

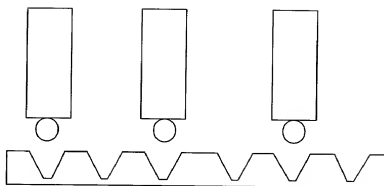


FIG. 71A

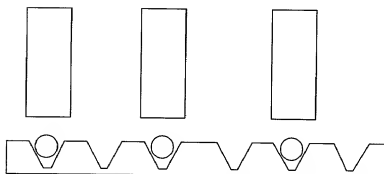


FIG. 71B

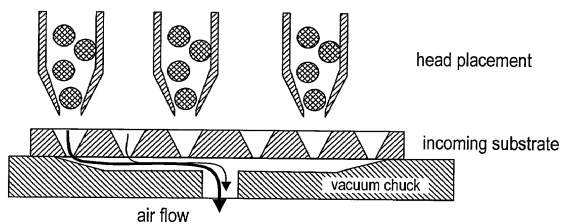


FIG. 72A

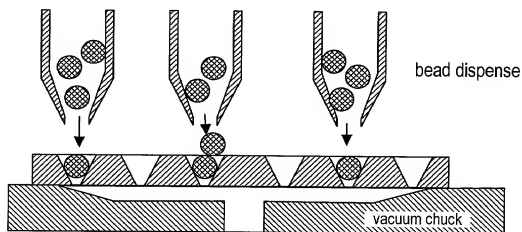


FIG. 72B

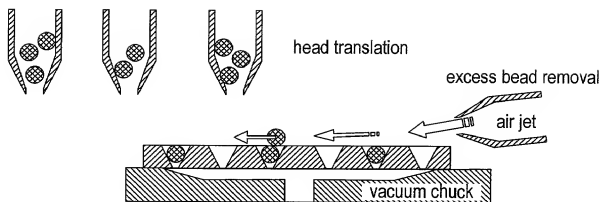


FIG. 72C

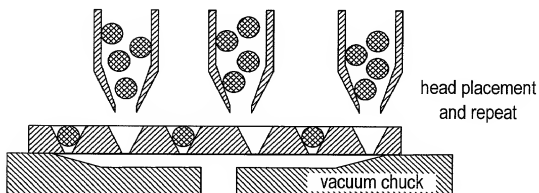


FIG. 72D

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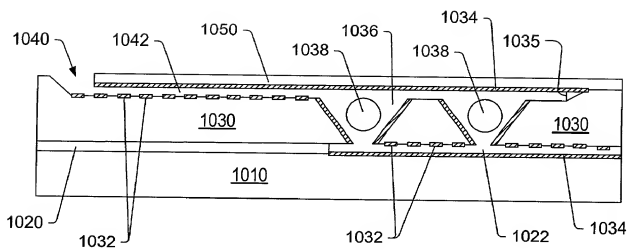


FIG. 73

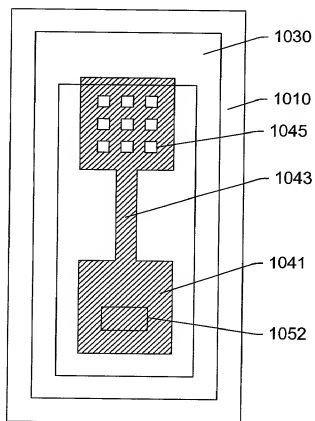


FIG. 74A

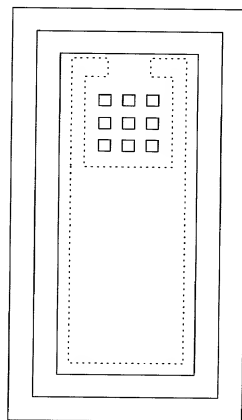


FIG. 74B



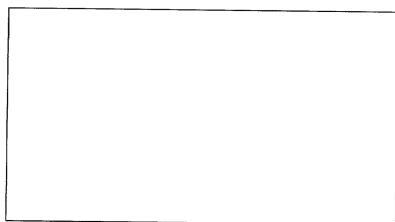


FIG. 75D

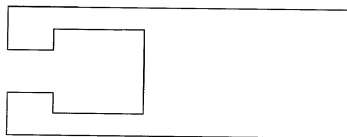


FIG. 75C

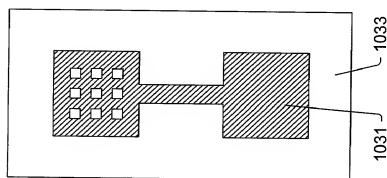


FIG. 75B

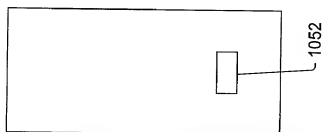


FIG. 75A

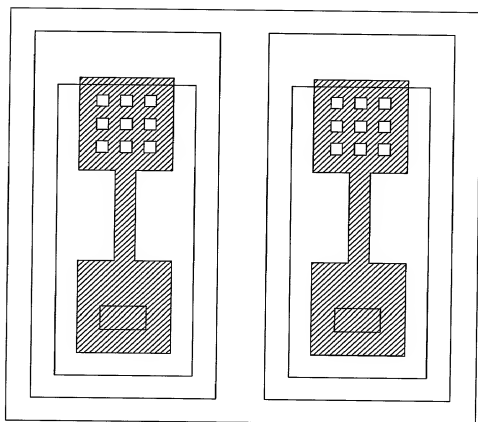


FIG. 76

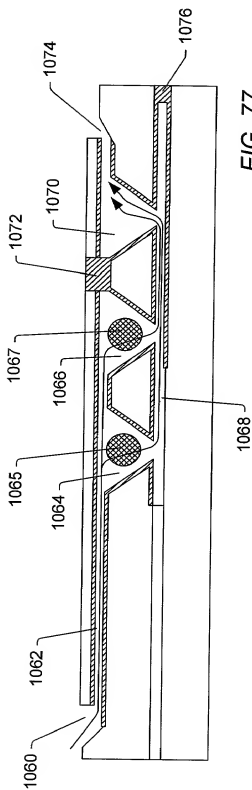


FIG. 77

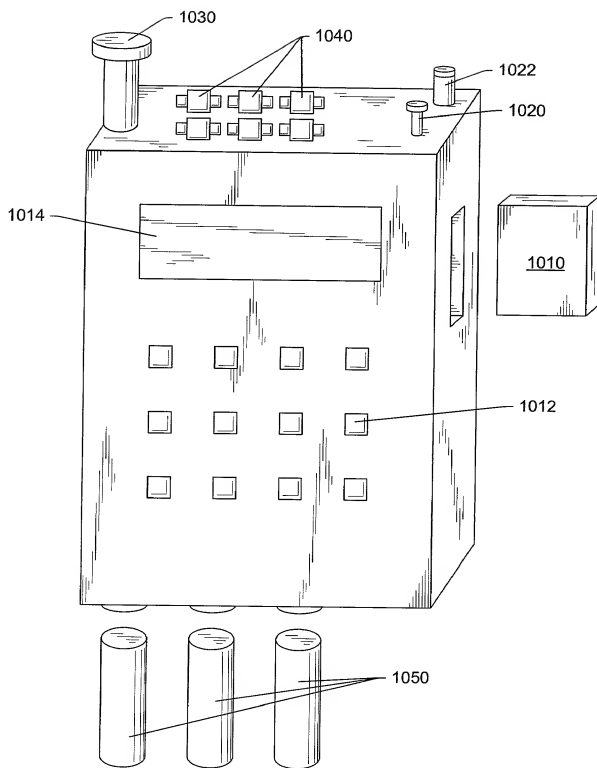


FIG. 78

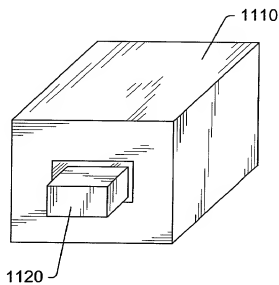


FIG. 79A

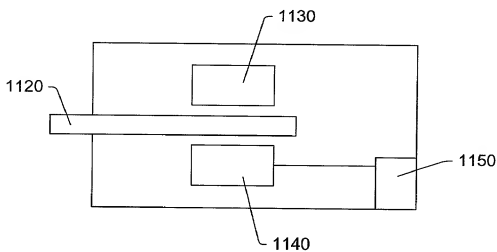
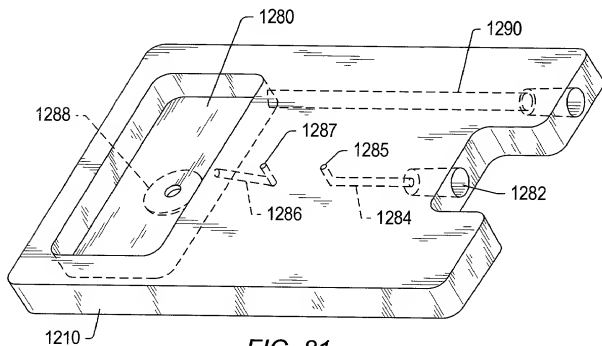
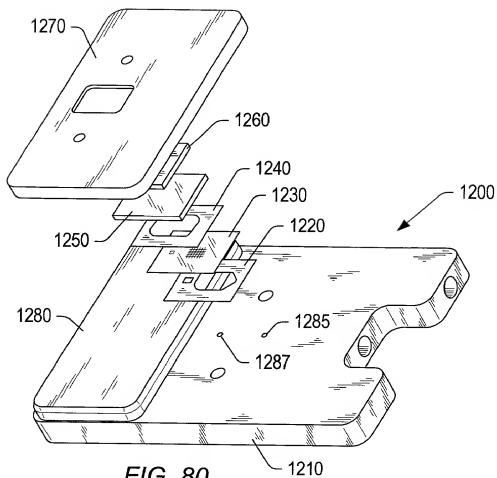


FIG. 79B



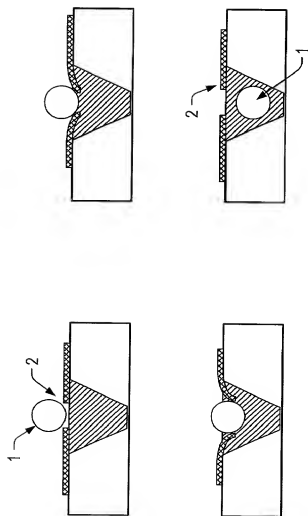


FIG. 82